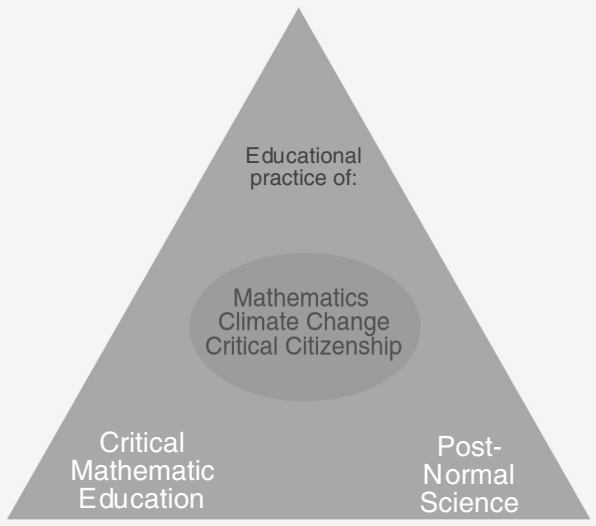
# How can focusing on Climate Change facilitate students' Critical Mathematics Perspectives?

Key concepts: critical mathematics education/perspective, mathemacy, reflective knowing, formatting power of mathematics, climate change, values, conflicts, uncertainty, post-normal science, critical citizenship, social response-ability, extended peer community, reflective educational practice

## Research Question 1

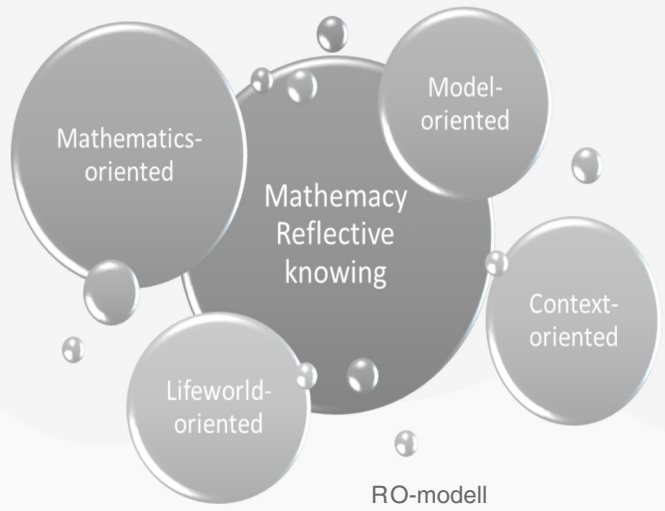



How can theories within critical mathematics education and post-normal science provide insights into how students can develop critical mathematics perspectives in a climate change context?

## Research Question 2

What characterizes teachers' facilitation when the aim is to develop students' critical mathematic perspectives in a climate change context?

## Research Question 3



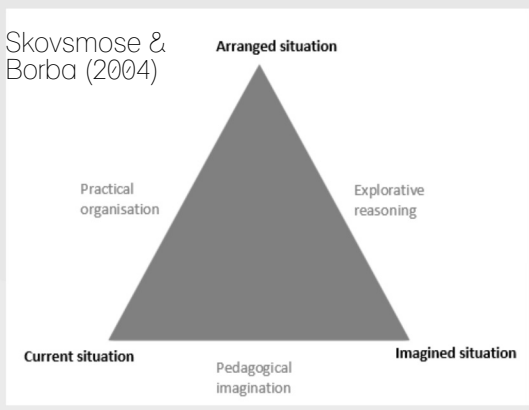

What characterizes students' written and oral reflections when critical mathematics perspectives is facilitated in a climate change context? And how is mathemacy reflected in the students' reflections?

## Methodology and methods

### Research question 1:

Overview study
Search strategies, inclusion, exclusion, quality assessment

### Research question 2 and 3 - empirical research




Action Research - in a research partnership
Collaborative research in iterative loops with four teachers and five classes in 10th grade. Both teachers and students are researcher through reflective educational practices.
Triangulation of methods such as video- and audio recording, interviews, observations, field notes, transcribe, code

## Analysis

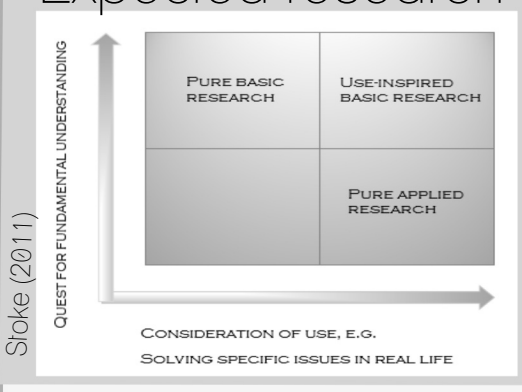
Identifying focus areas through key terms and systematization

Identify patterns of reflections through categorizations and operationalization in Skovsmose's six reflection steps (1992) and RO-model

(I) Have we used the algorithm in the right way? (2) Have we used the right algorithm?
(3) Can we rely on the result from this algorithm? (4) Could we do without formal calculations?
(5) How does the actual use of an algorithm (appropriate or not) affect a specific context?
(6) Could we have performed the evaluation in other way?

*Mathematic Education for the future*

## Expected research findings




I consider that the research is both driven by a quest for fundamental understanding, and with consideration of use in mind. Expected findings could then be of direct practical use for teachers and students and for generating theory on learning processes within critical mathematics education when climate change becomes part of the mathematics classroom.

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